

APPENDIX E

EVALUATION OF DATA QUALITY OBJECTIVES ATTAINMENT

Activity	Objectives	Action	Objective Attained?	Recommendations
Objective 1: Meet TNRCC Requirements for Site Closure				
Attainment of Risk Reduction Standard Number 1: Closure/Remediation to Background				
	Remove all hazardous and non-hazardous waste and waste residues and contaminated design and operating system components such as liners, leachate collection systems, and dikes from the unit or area of the unauthorized discharge. For remediation of media that have become contaminated by releases from a waste management unit or by other unauthorized discharge of hazardous or non-hazardous waste, the contaminated media must be removed or decontaminated to cleanup levels specified in this section (30 TAC 335.554(b) and (c)).	Soil borings were advanced at AOC-67. Samples were analyzed for metals, VOCs, and, in some cases, SVOCs and TPH. A boring was advanced through the concrete pad into the soils underlying the former above ground storage tank. The remaining two borings were advanced in areas most likely to contain potential contamination in the drainage area.	Yes. Surface sampling (0-3 feet) indicated metals contamination. Subsurface bedrock sampling indicates no COCs associated with past waste activities.	Further activities including shallow subsurface excavation and confirmation resampling are recommended for AOC-67.

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	<p>Determine compliance with RRS1 closure requirements by comparing background as represented by results of analyses of samples taken from media that are unaffected by waste management or industrial activities. If the practical quantitation limit (PQL) is greater than background, then the PQL rather than background shall be used as the cleanup level provided that the person satisfactorily demonstrates to the executive director that lower levels of quantitation of a contaminant are not possible (30 TAC 335.554(d)).</p>	<p>Contaminant concentrations were compared to draft revised background levels (Parsons ES, May 2001) or RLs, which are equivalent to PQLs.</p>	<p>Yes. The results were compared to background levels or RLs. Metal concentrations exceeded background in the shallow subsurface (0-3 feet), and slightly exceeded background in some bedrock samples.</p>	<p>Further activities including shallow subsurface excavation and confirmation resampling are recommended for AOC-67.</p>
	<p>Attainment of cleanup levels shall be demonstrated by collection and analysis of samples from the media of concern (30 TAC 335.554(e)).</p>	<p>Surface and subsurface samples were collected at the site and analyzed for contaminants of potential concern, including metals, VOCs, SVOCs, and TPH.</p>	<p>No. Cleanup levels were not attained for shallow subsurface samples.</p>	<p>Further activities including shallow subsurface excavation and confirmation resampling are recommended for AOC-67.</p>

Activity	Objectives	Action	Objective Attained?	Recommendations
Objective 2: Meet Requirements of 3008(h) Order for RFI				
RFI Workplan Requirements				
Field Sampling <i>(Detailed listing of methods and procedures are provided in project plans which are incorporated by reference).</i>	Conduct field sampling in accordance with procedures defined in the project work plan, SAP, QAPP, and HSP.	All sampling was conducted in accordance with the procedures described in the project plans.	Yes.	NA
Facility Investigation				
Characterization of Environmental Setting - Hydrogeology (B.3.A.1)	Evaluate hydrogeologic conditions at the site.	Not included in this phase of the RFI at AOC-67. Groundwater of the Trinity Aquifer is being addressed through the Groundwater Investigation.	NA	NA
Characterization of Environmental Setting- Soils (B.3.A.2)	Characterize soils in accordance with USCS soil classification system (B.3.A.2(a)).	Soil types at the site are based on the SCS Bexar County Soil Survey (USDA, 1991) and are described in Section 1.2.1.	Yes.	NA
	Determine soil pH (B.3.A.2(e)).	The pH of each of the soil types evaluated as part of the background metals concentration study was determined through laboratory analysis. According to those analyses, the pH of Crawford and Bexar Complex soils is 7.77.	Yes.	NA
	Determine moisture content (B.3.A.2(g)).	The moisture content of each sample was analyzed and reported in the laboratory package.	Yes.	NA
Characterization of Environmental Setting – Surface Water and Sediment (B.3.A.3)	Characterize marshes, creeks, wetland areas, or ditches at the site.	No marshes, creeks, or wetland areas are present at the site. A ditch is located within AOC-67. Direction of runoff flow has been evaluated in Section 1.2.1.	Yes.	NA

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Source Characterization (B.3.B)	Identify the source area (B.3.B.1).	A description of the potential source area is provided in Section 1.1.2.2.	Yes. Sampling at the site was biased toward areas most suspected of contamination.	NA
	Identify the location of the unit/disposal area (B.3.B.2(a)).	The boundaries were initially marked from review of CSSA records, and confirmed by field investigations.	Yes. Although the accuracy of the boundary survey of the site is estimated to have an approximate error of 25 feet, this accuracy is sufficient for closure under RRS1.	NA
	Identify the type of unit/disposal area (B.3.B.2(b)).	A concrete pad was identified that was previously used as a support base for an above ground vat that stored rinsate from Building 90.	Yes. A soil gas survey, surface and subsurface sampling were performed in the vicinity of Building 90, including AOC-67. The PCE plume identified by the soil gas survey was delineated to the west and south of AOC-67 and not reported in AOC-67.	Further activities including shallow subsurface excavation and confirmation resampling are recommended for AOC-67.
	Identify design features (B.3.A.2(c)).	All available information regarding the previous activities at the site is provided in Section 1.1.	Yes. All investigation evidence indicates that the above ground vat was used to store rinsate from Building 90, where ordinance cleaning was performed.	NA
	Identification of past and present operating practices, period of operation, age of unit/disposal area, and method used to close the unit/disposal area (B.3.B.2(d), (e), (f), and (h)).	All known information regarding these items is provided in Section 1.1.2.1. This information is from records review, interviews, aerial photo review, and visual observations.	Yes. To the extent possible with data available.	NA
	Determine general physical conditions of the site (B.3.B.2(g))	The general physical condition of the site was determined during the field investigation. This information is presented in Section 1.1.2.3.	Yes.	NA

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	Identify waste characteristics, including type of waste placed in the unit, physical and chemical characteristics of the wastes, and migration and dispersal characteristics of the waste (B.3.B.3).	Records regarding historic waste disposal practices at CSSA are very limited. All known information, derived from the Environmental Assessment (if appropriate for your site), records review, interviews, and visual observations at the site is provided in Section 1.3.	Yes. To the extent possible with the data available.	NA
Contamination Characterization – Groundwater (B.3.C.1)	Characterize the vertical and horizontal extent of groundwater contamination.	Groundwater samples were not collected at AOC-67.	NA	NA
Contamination Characterization – Soil (B.3.C.2)	Determine vertical and horizontal extent of contamination (B.3.C.2(a)).	Surface and subsurface soil samples were collected to determine the vertical and horizontal extent of contamination, if any.	No. Metals concentrations in samples collected from the shallow subsurface exceeded background.	Further activities including shallow subsurface excavation and confirmation resampling are recommended for AOC-67.
	Describe soil properties (B.3.C.2(c)).	See “Characterization of Environmental Setting – Soils” above.	NA	NA
	Identify the direction of contaminant movement (B.3.C.2(d)).	Contaminant movement in the soils south and west of AOC-67 appears to be in the soils, in a south-southwest direction.	NA	NA
	Extrapolate future contaminant movement (B.3.C.2(e)).	Samples collected at AOC-67 exceeded closure criteria.	Yes.	NA

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	Implement a soil boring investigation to determine the extent of soil contamination. Soil gas monitoring will be performed during drilling of all borings. Laboratory analysis of borings for contaminants of potential concern will be performed on soils at depths where either visual contamination is evident, or soil gas concentrations indicate contamination. All boreholes shall be properly abandoned.	Soil borings were advanced at AOC-67. Soil gases were monitored during boring collection, and laboratory analyses were performed on samples retained from depth intervals of the borings that appeared to potentially contain COCs.	Yes. Borings were advanced and properly abandoned.	Further activities including shallow subsurface excavation and confirmation resampling are recommended for AOC-67.
	Prepare a map of all areas included in the investigation (B.3.C.2(i)).	Figures included in this report show all areas included in the investigation.	Yes.	NA
	All reporting limits should be below regulatory criteria.	RLs were approved by TNRCC on October 5, 1999. RLs are considered RRS1 standards for all analytes except metals. Metals are compared to CSSA background concentrations for soil and bedrock (Second Revision to the Evaluation of Background Metals Concentration in Soil and Bedrock at Camp Stanley Storage Activity).	No.	The objective will be attained upon approval of the background metals concentrations by TNRCC.
	Perform all analyses in accordance with the AFCEE QAPP.	All analyses were performed in accordance with the AFCEE QAPP and approved variances.	Yes.	NA
		All data flagged with "U," "F," "M," and "J" are considered usable for site characterization purposes.	Yes.	NA

Activity	Objectives	Action	Objective Attained?	Recommendations
Contaminant Characterization – Sediment and Surface Water (B.3.C.3)	Conduct a surface water and sediment investigation to characterize contamination resulting from releases at the Facility.	A ditch crosses AOC-67. This ditch only contains water during and shortly after heavy precipitation. Therefore, surface water was not sampled as part of the AOC-67 investigation.	NA	NA
Potential Receptors (B.3.D).	Collect the information necessary to describe the human populations and environmental systems that are susceptible to contaminant exposure from the Facility.	Information regarding receptors is provided in the Risk Assessment Technical Approach Document (Volume 1-6). In addition, the Well Research Report identifies private groundwater users within 0.25-mile and public water suppliers within 0.5-mile of CSSA	Yes.	NA